

- 32 -

**What is claimed is:****1. An isolated polypeptide selected from the group consisting of:**

(i) an isolated polypeptide comprising an amino acid sequence selected from the group having at least:

5

(a) 70% identity;

(b) 80% identity;

(c) 90% identity; or

(d) 95% identity

to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID

10

NO:2;

(ii) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2 or

(iii) an isolated polypeptide which is the amino acid sequence of SEQ ID NO:2.

**2. An isolated polynucleotide selected from the group consisting of:**

15

(i) an isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide that has at least

(a) 70% identity;

(b) 80% identity;

(c) 90% identity; or

20

(d) 95% identity;

to the amino acid sequence of SEQ ID NO:2, over the entire length of SEQ ID NO:2;

(ii) an isolated polynucleotide comprising a nucleotide sequence that has at least:

(a) 70% identity

(b) 80% identity;

25

(c) 90% identity; or

(d) 95% identity;

over its entire length to a nucleotide sequence encoding the polypeptide of SEQ ID NO:2;

(iii) an isolated polynucleotide comprising a nucleotide sequence which has at least:

30

(a) 70% identity;

(b) 80% identity;

(c) 90% identity; or

(d) 95% identity;

- 33 -

to that of SEQ ID NO: 1 over the entire length of SEQ ID NO:1;

(iv) an isolated polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO:2;

(vi) an isolated polynucleotide which is the polynucleotide of SEQ ID NO: 1; or

5 (vi) an isolated polynucleotide obtainable by screening an appropriate library under stringent hybridization conditions with a labeled probe having the sequence of SEQ ID NO: 1 or a fragment thereof;  
or a nucleotide sequence complementary to said isolated polynucleotide.

10 3. An antibody immunospecific for the polypeptide of claim 1.

4. A method for the treatment of a subject:

(i) in need of enhanced activity or expression of the polypeptide of claim 1 comprising:

15 (a) administering to the subject a therapeutically effective amount of an agonist to said polypeptide; and/or  
(b) providing to the subject an isolated polynucleotide comprising a nucleotide sequence encoding said polypeptide in a form so as to effect production of said polypeptide activity *in vivo*.; or

(ii) having need to inhibit activity or expression of the polypeptide of claim 1  
20 comprising:

(a) administering to the subject a therapeutically effective amount of an antagonist to said polypeptide; and/or  
(b) administering to the subject a nucleic acid molecule that inhibits the expression of a nucleotide sequence encoding said polypeptide; and/or  
25 (c) administering to the subject a therapeutically effective amount of a polypeptide that competes with said polypeptide for its ligand, substrate, or receptor.

5. A process for diagnosing a disease or a susceptibility to a disease in a subject related to  
30 expression or activity of the polypeptide of claim 1 in a subject comprising:

(a) determining the presence or absence of a mutation in the nucleotide sequence encoding said polypeptide in the genome of said subject; and/or

(b) analyzing for the presence or amount of said polypeptide expression in a sample

- 34 -

derived from said subject.

6. A method for screening to identify compounds which stimulate or which inhibit the function of the polypeptide of claim 1 which comprises a method selected from the group consisting of:

- 5       (a) measuring the binding of a candidate compound to the polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof by means of a label directly or indirectly associated with the candidate compound;
  - (b) measuring the binding of a candidate compound to the polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof in the presence of a  
10       labeled competitor;
  - (c) testing whether the candidate compound results in a signal generated by activation or inhibition of the polypeptide, using detection systems appropriate to the cells or cell membranes bearing the polypeptide;
  - (d) mixing a candidate compound with a solution containing a polypeptide of claim 1, to  
15       form a mixture, measuring activity of the polypeptide in the mixture, and comparing the activity of the mixture to a standard; or
  - (e) detecting the effect of a candidate compound on the production of mRNA encoding said polypeptide and said polypeptide in cells, using for instance, an ELISA assay.
- 20   7. An agonist or an antagonist of the polypeptide of claim 1.
8. An expression system comprising a polynucleotide capable of producing a polypeptide of claim 1 when said expression system is present in a compatible host cell.
- 25   9. A process for producing a recombinant host cell comprising transforming or transfecting a cell with the expression system of claim 8 such that the host cell, under appropriate culture conditions, produces a polypeptide comprising an amino acid sequence having at least 70% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2.
- 30   10. A recombinant host cell produced by the process of claim 9.

- 35 -

11. A membrane of a recombinant host cell of claim 10 expressing a polypeptide comprising an amino acid sequence having at least 70% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2.
- 5 12. A process for producing a polypeptide comprising culturing a host cell of claim 10 under conditions sufficient for the production of said polypeptide and recovering the polypeptide from the culture.
13. An isolated polynucleotide selected from the group consisting of:
- 10 (a) an isolated polynucleotide comprising a nucleotide sequence which has at least 70%, 80%, 90%, 95%, 97% identity to SEQ ID NO:3 over the entire length of SEQ ID NO:3;
- (b) an isolated polynucleotide comprising the polynucleotide of SEQ ID NO:3;
- (c) the polynucleotide of SEQ ID NO:3; or
- (d) an isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide which has at
- 15 least 70%, 80%, 90%, 95%, 97-99% identity to the amino acid sequence of SEQ ID NO:4, over the entire length of SEQ ID NO:4.
14. A polypeptide selected from the group consisting of:
- (a) a polypeptide which comprises an amino acid sequence which has at least 70%, 80%, 90%,
- 20 95%, 97-99% identity to that of SEQ ID NO:4 over the entire length of SEQ ID NO:4;
- (b) a polypeptide which has an amino acid sequence which is at least 70%, 80%, 90%, 95%, 97-99% identity to the amino acid sequence of SEQ ID NO:4 over the entire length of SEQ ID NO:4;
- (c) a polypeptide which comprises the amino acid of SEQ ID NO:4;
- 25 (d) a polypeptide which is the polypeptide of SEQ ID NO:4;
- (e) a polypeptide which is encoded by a polynucleotide comprising the sequence contained in SEQ ID NO:3.